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SE, SG, SK, SL, SY, SZ, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM only); APPLIED MATERIALS ISRAEL LTD. [IL/IL]; 8 Oppenheimer Street, 76236 Rehovot (IL).

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[Continued on next page]

(54) Title: A SYSTEM AND METHOD FOR DETERMINING A CROSS SECTIONAL FEATURE OF A STRUCTURAL ELEMENT USING A REFERENCE STRUCTURAL ELEMENT

400

470

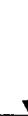
Obtain a waveform representative of detection signals generated as a result of an interaction between a scanning electron beam and a structural element.

(57) Abstract: A system and method for determining a cross sectional feature of a measured structural element having a sub-micron cross section, the cross section is defined by an intermediate section that is located between a first and a second traverse sections. The method starts by a first step of scanning, at a first tilt state, a first portion of a reference structural element and at least the first traverse section of the measured structural element, to determine a first relationship between the reference structural element and the first traverse section. The first step is followed by a second step of scanning, at a second tilt state, a second portion of a reference structural element and at least the second traverse section of the measured structural element, to determine a second relationship between the reference structural element and the second traverse section. The method ends by a third step of determining a cross sectional feature of the measured structural element in response to the first and second relationships.



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Calculate at least three points – a first point that is characterized by a maximal derivative value, a lower point and an upper point that are characterized by a predefined derivative values.



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Determine a location point in response to an intersection between a height threshold and a line that is drawn between the upper and lower points.